

Chapter Eleven

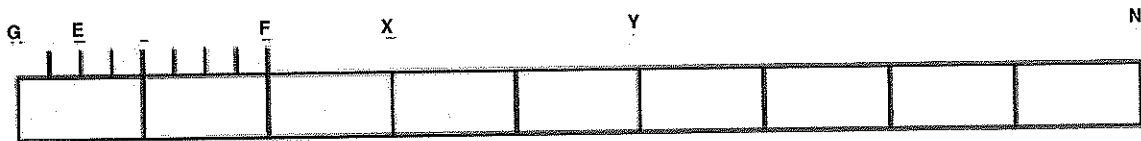
HUMAN DEVELOPMENT ACROSS THE LIFE SPAN

Review of Key Ideas

PROGRESS BEFORE BIRTH: PRENATAL DEVELOPMENT

1. Outline the major events of the three phases of prenatal development.

1-1. Each box below represents one month in the typical pregnancy; each short line at the top of the boxes represents one week. Indicate the beginning and end of each phase of prenatal development by placing the appropriate capital letters from the diagram in the blanks after the descriptions below.



- The germinal stage begins at conception, represented by point _____ in the diagram, and ends at point _____.
- The embryonic stage begins at point _____ and ends at point _____.
- The fetal stage begins at point _____ and ends at point _____.

1-2. List the names of the three phases of prenatal development in the order in which they occur. In the parentheses at the right indicate the age ranges encompassed by each stage.

- _____ ()
- _____ ()
- _____ ()

- 1-3.** Match each stage in the previous question with the descriptions below. Use the letters G, E, and F to represent the germinal, embryonic, and fetal stages.
- _____ The placenta begins to form.
 - _____ At the end of this stage the organism begins to have a human appearance; it is about an inch in length.
 - _____ The zygote begins to implant in the uterine wall; about one in five are rejected.
 - _____ Muscles and bones develop and physical movements occur.
 - _____ Most major birth defects probably have their origins in this stage.
 - _____ The age of viability (about 22 to 26 weeks after conception) occurs during this stage.

Answers: 1-1. (a) G, E (b) E, F (c) F, N **1-2.** (a) germinal (birth to two weeks) (b) embryonic (two weeks to two months) (c) fetal (two months to nine months) **1-3.** G, E, G, F, E, F.

2. Summarize the impact of environmental factors on prenatal development.

- 2-1.** Indicate whether the following statements concerning environmental factors and fetal development are true (T) or false (F).
- _____ Severe malnutrition increases the risk of birth complications and neurological deficits.
 - _____ Few if any drugs consumed by a pregnant woman are able to pass through the placental barrier.
 - _____ Relative to its affluence the U. S. has a high infant mortality rate.
 - _____ Recent studies indicate that moderate drinking during pregnancy produces no risk for the developing fetus.
 - _____ Heavy drinking of alcohol by a pregnant woman may produce microencephaly, heart defects, and retardation in her child.
 - _____ Smoking during pregnancy is related to increased risk of miscarriage and other birth complications.
 - _____ The placenta screens out many but not all infectious diseases.
 - _____ Genital herpes is usually transmitted during the birth process, when newborns come into contact with their mothers' lesions.
 - _____ AIDS is transmitted primarily during the birth process, when newborns come into contact with their mothers' blood cells.
 - _____ Good quality prenatal care is associated with fewer premature births and higher infant survival rates.

Answers: 2-1. T, F, T, F, T, T, T, T, T, T.

THE WONDROUS YEARS OF CHILDHOOD

3. Describe general principals of motor development and cultural variations in motor development.

- 3-1.** In the spaces below describe the two basic trends in motor development discussed in the text.

Cephalocaudal trend:

Proximodistal trend:

- 3-2. The average ages at which children display various behaviors and abilities are referred to as developmental _____. While these averages provide useful information they don't reflect variability, and the age at which children display certain behaviors or abilities varies (enormously/very little) across children.
- 3-3. With regard to the behavior of walking up steps, for example, which of the following is true?
- a. children walk up steps at approximately the same age.
 - b. many normal children don't walk up steps until well after or well before the average age indicated.
- 3-4. Maturation refers to developmental changes that reflect (genetic/environmental) factors. Current thinking emphasizes not only maturation but children's active involvement in exploring their worlds.
- 3-5. While cross-cultural research has revealed some consistencies in maturation among cultures, the discussion of the Kipsis and Ache in your text makes clear that culture (does/does not) play a role in motor development.
- 3-6. In other words, cultural differences may ____ early motor development.
- a. accelerate
 - b. delay
 - c. either accelerate or delay

Answers: 3-1. Head to foot: children tend to gain motor control of the upper body before the lower body. Center outward: the tendency to gain control of the torso before the limbs. 3-2. norms, enormously 3-3. b 3-4. genetic 3-5. does 3-6. c.

4. Summarize the findings of Thomas and Chess's longitudinal study of infant temperament and Kagan's work on temperament.

- 4-1. Identify the following designs by indicating whether they are longitudinal or cross-sectional.
- (a) _____ In this experimental design researchers compare groups of subjects of differing ages at a single point in time.
 - (b) _____ This design measures a single group of subjects over a period of time.
- 4-2. Using a longitudinal design Thomas and Chess identified three basic temperaments, described below. Place the names of these temperamental styles in the appropriate blanks: easy, slow-to-warm-up, difficult.
- (a) _____ Happy, regular in sleep and eating, adaptable.
 - (b) _____ Less cheery, less regular in sleep and eating, more wary of new experiences.
 - (c) _____ Glum, erratic in sleep and eating, irritable.

- 4-3. By far the largest group of children (about 40%) was of the _____ temperament, another 15% were _____, and 10% were in the _____ category. The remaining 35% showed mixtures of these three temperaments.
- 4-4. The major conclusion from the Thomas and Chess study is that a child's temperament at three months tended to be a (poor/fairly good) predictor of temperament at age ten years.
- 4-5. Using direct observation, Kagan and his colleagues classified infants into two major categories: an _____ temperament (shy, timid) or an _____ temperament. About 15-20% of infants were in the former category and 25%-30% in the latter. As with the Thomas and Chess study, these classifications of infants (were/were not) predictive of later temperament, in this case 20 years later.

Answers: 4-1. (a) cross-sectional (b) longitudinal 4-2. (a) easy (b) slow-to-warm-up (c) difficult 4-3. easy, slow-to-warm-up, difficult 4-4. fairly good 4-5. inhibited, uninhibited, were. (While these studies suggest a genetic component to temperament, Kagan makes clear that temperament is not fixed in stone.)

5. Describe Harlow's and Bowlby's views on attachment.

- 5-1. Early behaviorists proposed that an infant's attraction to its mother occurred because the mother fed the baby, thereby forming an association with food. According to this point of view attachment was (learned/innate), and the mother functioned as a (primary/conditioned) reinforcer.
- 5-2. Doubts about the simple conditioning explanation of attachment occurred as a result of Harlow's famous studies with rhesus monkeys using. In these studies infant rhesus monkeys grew up with either "wire" and "cloth" substitute mothers. Although the infant monkeys had been fed (or reinforced) by the _____ monkeys, they clung to the _____ mothers when frightened. The infants had formed attachments to the mothers that provided contact comfort, not to those that had fed them.
- 5-3. Bowlby has proposed an evolutionary basis for mother-infant attachment, that infants emit certain behaviors that automatically trigger affectionate and protective responses in adults. What do infants do that make them so adorable to adults? Among the behaviors they emit are _____, cooing, clinging, and so on. The infant's behaviors, and the adult's responses to them, are assumed to be in large part (learned/innate). If smiling in infants causes adults to protect them, then smiling clearly has _____ value in an evolutionary sense.

Answers: 5-1. learned, conditioned 5-2. wire, cloth 5-3. smiling, adaptive (survival).

6. Summarize theories of attachment and research on patterns of attachment and their effects.

- 6-1. Ainsworth and her colleagues divide types of infant-mother attachment into three categories. Label each of the following with the pattern of attachment described: *secure*, *anxious-ambivalent*, or *avoidant*.
- (a) _____ The infant is anxious even when the mother is near, becomes very agitated when she leaves, and is not comforted when the mother returns.

- (b) _____ The infant seeks little contact with the mother and is not distressed when she leaves.
- (c) _____ The infant plays comfortably when the mother is present, is upset when the mother leaves, but is quickly calmed by her when she returns.

- 6-2. Other researchers have added a fourth category of attachment, the disorganized-_____ attachment, in which children are confused about whether to approach or avoid their mothers.
- 6-3. Attachment appears to be related to behavior in later childhood and adulthood. For a number of desirable characteristics (e.g., persistence, curiosity, self-reliance) infants who experienced a _____ attachment seem to have the advantage. It is important to point out, however, that the relationship is correlational, so we (can/cannot) assume that secure attachment causes the favorable characteristics.

Answers: 6-1. (a) anxious-ambivalent (b) avoidant (c) secure 6-2. disoriented 6-3. secure, cannot.

7. Discuss cultural variations in attachment and explain Belsky's evolutionary perspective on attachment.

- 7-1. Especially between the ages of six months and a year and a half, infants show emotional distress or _____ anxiety when apart from their caregivers. Separation anxiety seems to be universal, occurring in all cultures.
- 7-2. There are slight differences in attachment patterns across cultures, however. For example, a study of German infants found a somewhat higher level of avoidant attachments. In all cultures studied, however, the _____ attachment is by far the predominant type.
- 7-3. Belsky proposed that in our evolutionary past the relative harshness of the environment affected parent-child attachment style, which in turn affected the later _____ strategy of the sexually mature offspring.
- 7-4. For example, a harsh, unsafe environment with scarce resources would cause parents to have little time for the child, which would produce a(an) (secure/insecure) attachment. When the child reached sexual maturity, the earlier attachment style would yield a sexually (opportunistic/enduring) mating strategy. Such a strategy would maximize reproductive potential in environments where long-term survival is (ensured/precarious).
- 7-5. In contrast, a safe environment rich in resources would allow parents the time and energy to be responsive to an infant's needs, which would produce a(an) _____ attachment. Belsky asserts that such an attachment is associated with (quality/quantity) in later mating relationships with relatively (few/many) sexual partners and a strong romantic bond.
- 7-6. In short, Belsky proposed that the local _____ affected parent-child _____ which influenced the child's later _____ strategy, which has significance for passing genes to the next generation.

Answers: 7-1. separation 7-2. secure 7-3. reproductive 7-4. insecure, opportunistic, precarious 7-5. secure, quality, few 7-6. environment, attachment, reproductive.

8. Outline the basic tenets of Erikson's theory and describe his stages of childhood personality development.

8-1. Erikson's theory is derived from Freudian psychoanalytic theory. However, while Freud asserted that there are five childhood stages, Erikson proposed that there are a total of _____ stages and that these stages occur during an individual's (childhood/entire lifespan).

8-2. Erikson described four childhood stages and four adult stages. In the spaces below write the names of the crises that mark the four childhood stages, and indicate in the parentheses the approximate ages at which the crises are supposed to occur.

(a) _____ vs. _____ ()

(b) _____ vs. _____ ()

(c) _____ vs. _____ ()

(d) _____ vs. _____ ()

8-3. Below are descriptions of several individuals. In what childhood stage would they have acquired these characteristics, according to Erikson? Use the letters from the question above to indicate the stages.

____ Jack has trouble functioning effectively in the world outside his family; he is unproductive, and he lacks a sense of competence.

____ Kristi is insecure and suspicious of everyone.

____ Larry was torn between being independent of his family and avoiding conflict; as an adult he feels guilty and lacks self-esteem.

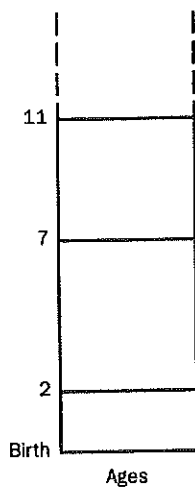
____ From an early age Maureen's parents never seemed satisfied with what she did. Maureen is plagued by a sense of shame and self-doubt.

8-4. As you may have noted in responding to the previous item, a weakness of Erikson's theory is that it attempts to account for very (few/many) aspects of personality. Thus, the theory cannot explain the enormous individual _____ between people.

Answers: **8-1.** 8, entire lifespan **8-2.** (a) trust vs. mistrust (first year) (b) autonomy vs. shame and doubt (second year) (c) initiative vs. guilt (ages 3 to 6) (d) industry vs. inferiority (age 6 through puberty) **8-3.** d, a, c, b **8-4.** few, differences (variation).

9. Outline Piaget's stages of cognitive development and discuss the strengths and weaknesses of Piaget's theory.

9-1. The diagram below represents Piaget's four main stages of development. Write the names of the stages in the appropriate blanks.



- (d) _____
- (c) _____
- (b) _____
- (a) _____

9-2. The stages of development are marked by changes in children's thinking processes brought about by two major processes. If the child interprets a new experience in terms of an existing mental structure, then _____ is operating. On the other hand, if the child interprets an experience by changing his thinking strategy, then the child has used _____.

9-3. Following is a list of characteristics of children's thinking during various stages. Identify the stage by placing the correct letter (from the diagram above) in the blanks.

- _____ At the end of this stage the child is beginning to develop the capacity for symbolic thought (to think terms of mental images).
- _____ At the beginning of this stage the child's behavior is dominated by reflexes and the ability to coordinate sensory input and movement.
- _____ The child understands conservation and can handle hierarchical classification but tends not to use abstractions.
- _____ The child's thought processes are abstract and systematic.
- _____ Object permanence occurs toward the end of this stage.
- _____ During the first part of this stage, "out of sight, out of mind" might describe the child's reaction to hidden objects.
- _____ When water is poured from a wide beaker into a taller beaker, children say there is now more water in the taller beaker.
- _____ The child demonstrates a lack of understanding of conservation.

_____ The child shows the shortcomings of centration, irreversibility, egocentrism, and animism.

_____ For the first time the child in this stage is mentally able to undo an action and also is able focus on more than one feature of a problem at the same time.

- 9-4. When my (R. S.) daughter Vanessa was about five, I placed two rows of stones on the grass, as illustrated below. Each row contained the same number of stones.

Row A:

Row B:

I then spread out one row so that it took up more space:

Row A:

Row B:

- (a) I then asked Vanessa to point to the row that now had more stones. If Vanessa behaved like other preoperational children, which row would she point to? _____
- (b) The preoperational child has not yet mastered the principle that physical quantities remain constant in spite of changes in their shape or, in this case, arrangement. What is the name of this principle? _____

- 9-5. Some research has demonstrated that certain aspects of Piaget's theory may be incorrect in detail. For example, there is some evidence that object permanence and some aspects of conservation may develop (earlier/later) than Piaget had thought.

- 9-6. Piaget also had little to say about individual _____ in development or about so-called _____ of stages in which elements of an earlier stage may appear in a later one.

- 9-7. Piaget thought that people of all cultures would pass through the stages at the same time; subsequent research has found that this (is/is not) the case. While the sequence of stages appears to be relatively invariant across cultures, the _____ that children follow in passing through these stages varies considerably across cultures. Nonetheless, Piaget's brilliance, the novelty of his approach, and the wealth of research that his theory inspired assure his place in history.

Answers: 9-1. (a) sensorimotor (b) preoperational (c) concrete operations (d) formal operations 9-2. assimilation, accommodation 9-3. a, a, c, d, a, a, b, b, b, c 9-4. (a) Row A (at which point Samantha, then eight and in the stage of concrete operations, was astonished by her sister's choice and informed her that there were the same number in both!) (b) conservation 9-5. earlier 9-6. differences, mixing 9-7. is not, timetable (age, time).

10. Describe Vygotsky's sociocultural theory of cognitive development.

- 10-1. Vygotsky's theory of cognitive development differs from Piaget's in three major respects. First, while Piaget emphasized the child as active agent exploring the world around him, Vygotsky emphasized social _____ as a key factor in cognitive development. Second, Piaget viewed the stages of development as relatively universal across cultures; in contrast, Vygotsky asserted that _____ played a differentiating role in cognitive development. Third, for Piaget language was just one expression of a stage of cognitive development; for Vygotsky, language was a _____ factor in organizing the child's world.

10-2. Match the following with the emphasis in either Piaget's or Vygotsky's theories.

_____ The literacy and language in a culture is a crucial factor in cognitive development.

_____ The interaction between children and their teachers, peers, and parents is critical in cognitive development.

_____ Language occurs as a result of reaching a particular stage of development.

10-3. Label the following descriptions with major concepts from Vygotsky's theory.

_____ There is a gap between what a child can achieve alone versus what they could achieve with guidance from more skilled members of a society.

_____ The tutor (or teacher, parent, peer, etc.) helps bridge the gap, and the amount of help is adjusted as the child's competence at a task increases.

Answers: 10-1. interaction, culture, central (major) 10-2. Vygotsky, Vygotsky, Piaget 10-3. zone of proximal development (ZPD), scaffolding.

11. Summarize evidence which suggests that some cognitive abilities could be innate.

11-1. When infants look at a stimulus that is presented repeatedly, the strength of their responses gradually decreases. They spend less and less time looking at the stimulus, and their heart and respiration rates decrease. This reduction in response strength is known as _____. When a new stimulus is presented, response strength increases, a process known as _____.

11-2. By using the habituation-dishabituation technique, researchers can tell when a child is able to discriminate between different events. For example, at three to four months of age, infants understand that (write T or F for each of the following):

___ Objects on slopes roll down rather than up.

___ One solid object cannot pass through another.

___ Objects move in continuous paths.

11-3. In another demonstration of the cognitive abilities of young children, five-month-old infants were shown a display in which an object was added to or subtracted from others behind a screen. Remarkably, the children exhibited surprise, indicated by the response of (habituation/dishabituation), when the expected number of objects was not there.

11-4. This result suggests that infants have some rudimentary understanding of arithmetic—at least that they can _____ and _____ small numbers (e.g., $1 + 1$, $3 - 1$). More recently (see the Featured Study) the same authors found that nine-month-old infants seem to understand even larger numbers (e.g., $5 + 5$).

- 11-5. Because these cognitive abilities occur at such an early age, before infants would have had much chance to learn them, some theorists have concluded that these capacities are largely (acquired/innate).
- 11-6. Two groups of theorists favor the innate explanation: nativists and evolutionary psychologists. Of these it is primarily the (nativists/evolutionary theorists) who are interested in explaining why we would be pre-wired with certain cognitive abilities. They assert that basic addition and subtraction abilities, for example, had clear _____ value in a hunting, foraging, and social-bargaining society.

Answers: 11-1. habituation, dishabituation 11-2. T, T, T 11-3. dishabituation 11-4. add, subtract 11-5. innate 11-6. evolutionary theorists, survival (adaptive).

12. Outline Kohlberg's stages of moral development and summarize the strengths and weaknesses of Kohlberg's theory.

- 12-1. Kohlberg's theory includes three moral levels, each with two stages for a total of six stages. Indicate which of the three moral levels is described in each of the following statements.
- (a) Acts are considered wrong because they are punished or right because they lead to positive consequences. _____
- (b) Individuals at this level conform very strictly to society's rules, which they accept as absolute and inviolable. _____
- (c) This level is characterized by situational or conditional morality, such that stealing might be considered wrong in one circumstance but permissible in another. _____
- 12-2. The central ideas of Kohlberg's theory have received a fair amount of support. Research has found that children (do/do not) tend to progress through Kohlberg's stages in the order that he indicated. As children get older, stages 1 and 2 reasoning tend to decrease while stages 3 and 4 reasoning tend to _____.
- 12-3. There have also been several criticisms of Kohlberg's theory. First, individuals may show characteristics of several different stages at the same time. In other words, as was true of other stage theories, there tends to be a "_____ " of stages.
- 12-4. Second, researchers have focused too heavily on (Kohlberg's/newly created) dilemmas, which tends to narrow the scope of research on moral reasoning.
- 12-5. Third, it may be the case that Kohlberg's theory is much more (value-free/culture-specific) than he had supposed. For example, subjects from small, technologically unsophisticated village societies (usually/rarely) show reasoning beyond stage 3.

Answers: 12-1. (a) preconventional (b) conventional (c) postconventional 12-2. do, increase 12-3. mixing 12-4. Kohlberg's 12-5. culture-specific, rarely.

THE TRANSITION OF ADOLESCENCE

13. Describe the physiological changes of puberty and research on neural development in adolescence.

13-1. Read over the section on Puberty and the Growth Spurt in your text. Then fill in the blanks below with the appropriate concepts: adolescent growth spurt, secondary sex characteristics, puberty, menarche, primary sex characteristics.

- (a) _____ Rapid growth in height and weight in the two-year span preceding puberty.
- (b) _____ The period of time during which secondary sex characteristics appear.
- (c) _____ Physical features that distinguish one sex from another but that are not essential for reproduction (e.g., facial hair in males, breasts in females).
- (d) _____ The sexual structures essential for reproduction develop fully.
- (e) _____ The stage that includes menarche in females and the first production of sperm in males.
- (f) _____ The first occurrence of menstruation.
- (g) _____ The first occurrence of ejaculation.

13-2. Girls who mature (early/late) and boys who mature (early/late) may be subject to greater emotional distress during adolescence. In both sexes, early maturation is associated with difficulties (e.g., alcohol use, trouble with the law), but the problems encountered by early-maturing (females/males) are likely to be more severe.

13-3. Indicate true or false for the following:

- ___ The overall size of the human brain increases significantly during adolescence.
- ___ White matter (myelin) in the brain increases during adolescence.
- ___ Gray matter decreases in adolescence due to synaptic pruning and formation of neural networks.
- ___ Maturation of the brain is not complete until late adolescence or early adulthood.
- ___ The prefrontal cortex matures last, which may account for increased risky behavior during adolescence.

Answers: 13-1. (a) adolescent growth spurt (b) puberty (c) secondary sex characteristics (d) primary sex characteristics (e) puberty (f) menarche (g) spermarche 13-2. early, late, females 13-3. F, T, T, T, T.

14. Evaluate the assertion that adolescence is a time of turmoil.

14-1. How tumultuous is adolescence? With regard to suicide and other indicants of stress, current data indicate that: (Mark T or F for each of the following statements.)

- ___ Suicide among adolescents is higher than for any other age group.
- ___ The ratio of attempted to completed suicides is much higher for adolescents than for any other age group.

- _____ Adolescence brings an increase in conflicts between parents and their children.
- _____ Adolescents engage in more risky behaviors and are more prone to negative emotions than are other age groups.
- _____ In general, adolescents encounter somewhat more storm and stress than do people in other periods of life.

14-2. Violence (is/is not) higher during the adolescent years than during other age periods. Arrests for violent crimes increases up to about age _____ and then gradually decline. While school shootings are highly publicized, almost all of adolescent violence occurs (within/outside) school settings.

Answers: 14-1. F, T, T, T, T 14-2. is, 18, outside.

15. Discuss some common patterns of identity formation in adolescence.

- 15-1.** Adolescence is a period of change, so it is readily understandable that adolescents tend to focus on the struggle for _____, the question of “Who am I?”
- 15-2.** Recall that Erik Erikson described four crises that mark childhood. What is the crisis that marks the fifth stage, adolescence, according to Erikson? _____ vs. _____
- 15-3.** Marcia (1966, 1980) has described four orientations or statuses that individuals may adopt in attempting to resolve identity: identity diffusion, identity foreclosure, identity moratorium, and identity achievement.
- (a) One possible status is simply to take on the values and roles prescribed by one’s parents, the status of identity _____. While this may temporarily resolve the crisis, in the long run the individual may not be comfortable with the adopted identity.
 - (b) Another status involves a period of experimentation with various ideologies and careers and a delay in commitment to any one, termed identity _____.
 - (c) If the experimentation and lack of commitment become permanent, the individual is said to be in a status of identity _____.
 - (d) On the other hand, if the consideration of alternatives leads to conviction about a sense of self, one takes on the status referred to as identity _____.
- 15-4.** Although identity achievement is the most mature status and diffusion the least, adolescents do not pass through the statuses in an orderly manner. In fact, recent research has found that (very few/most) adolescents shift back and forth among the four identity statuses. In addition, most individuals reach the most mature stage, identity _____ at a later age than Marcia had supposed.

Answers: 15-1. identity 15-2. identity, confusion 15-3. foreclosure, moratorium, diffusion, achievement 15-4. most, achievement.

THE EXPANSE OF ADULTHOOD

16. Summarize evidence on the stability of personality and the prevalence of the midlife crisis.

- 16-1. Do people change throughout their lifetimes, or does personality tend to remain the same? Research evidence supports the conclusion that:
- personality is stable across one's lifetime
 - personality changes across one's lifetime
 - both of the above
 - neither of the above
- 16-2. The explanation for these apparently contradictory findings is that some personality traits do appear to _____ as people grow older while others remain _____.
- 16-3. Two influential studies conducted in the 1970s asserted that people experience a period of emotional turmoil some time between ages 35 and 45, a transitional phase known as the _____.
- 16-4. The mid-life crisis, described as a period of reappraisal and assessment of time left, was thought by Gould and Levinson to be a transitional phase that affected (very few/most) adults. Recent studies have cast doubt on the conclusion that a midlife crisis is a normal part of aging. Using more objective methods, a large number of investigators have found that (very few/most) people go through a midlife crisis.

Answers: 16-1. c 16-2. change, stable (the same) 16-3. midlife crisis 16-4. most, very few.

17. Outline Erikson's stages of development in adulthood.

- 17-1. In the spaces below write the names of the crises that mark Erikson's three stages of adulthood. In the parentheses indicate the approximate period of adulthood during which the crises are supposed to occur.
- (a) _____ vs. _____ ()
- (b) _____ vs. _____ ()
- (c) _____ vs. _____ ()

- 17-2. Following are descriptions of the crises occurring in each of the above stages. Indicate the stages by placing the appropriate letters (a, b, or c from the previous question) in the blanks.

_____ Concern for helping future generations versus a self-indulgent concern for meeting one's own desires.

_____ Concern to find meaning in the remainder of one's life versus a preoccupation with earlier failures and eventual death.

_____ Concern for developing a capacity for intimacy with others versus a strategy in which others are manipulated as a means to an end.

Answers: 17-1. (a) intimacy vs. isolation (early adulthood) (b) generativity vs. self-absorption (middle adulthood) (c) integrity vs. despair (aging years) 17-2. b, c, a.

18. Describe typical transitions in family relations during the adult years.

- 18-1.** In part due to shifting social and economic trends, remaining single or postponing marriage is a much more acceptable option today than it was a few decades ago. Nonetheless, over _____ percent of adults eventually marry.
- 18-2.** In general the level of happiness in marriage tends to be U-shaped. That is, spouses overall satisfaction with marital life tends to be highest at both the beginning and end and reach a low point toward the _____ of the family cycle.
- 18-3.** What causes the drop in marital satisfaction during the middle years? To some degree it coincides with the burdens of child rearing. The decline begins to occur (only after/even before) the first child is born, however, so other factors appear to be involved as well.
- 18-4.** Although most couples rate parenthood as a very positive experience, the birth of a child is frequently quite stressful. Adolescence, while not as contentious a period as previously believed, (does/does not) bring an increase in parent-child conflict. The effects of this conflict appear to be more adverse for the (children/parents).
- 18-5.** Marital satisfaction tends to (decrease/increase) as the children grow up and leave home. Parents seem to adjust well to the “empty nest” and, in fact, are more likely to have problems if their children (return to/ stay away from) the home.

Answers: 18-1. 90 18-2. middle 18-3. even before 18-4. parents 18-5. increase, return to.

19. Describe the physical changes associated with aging and the evidence on Alzheimer’s disease.

- 19-1.** As we age, our physical and cognitive characteristics change. Indicate which of the following physical traits increase and which decrease by placing checkmarks in the appropriate blanks.

	Increases	Decreases
<i>Physical changes</i>		
Proportion of body fat:	_____	_____
Overall weight:	_____	_____
Brain weight:	_____	_____
Visual acuity:	_____	_____
Ability to see close:	_____	_____
Hearing:	_____	_____

- 19-2.** The ending of the menstrual cycle and loss of fertility among women is referred to as _____. Most women experience some physical discomfort during menopause (e.g., hot flashes), but the emotional distress (does/does not) appear to be especially severe.
- 19-3.** Men (also/do not) go through a comparable experience. Testosterone levels begin to decline at middle age, and the eventual loss is (slight/substantial). The change occurs gradually, however, and is not comparable to the relatively sudden onset of menopause in women.

- 19-4. An abnormal condition marked by loss of memory and other cognitive abilities is termed a _____. Dementia occurs in approximately _____% of individuals over age 65. Thus, dementia (is/is not) a normal part of the aging process.
- 19-5. The disorder known as _____ disease accounts for approximately 70% of dementia. This disease is accompanied by a (slight/widespread) loss of neurons, beginning in the hippocampus and spreading to other areas of the brain.
- 19-6. Alzheimer's usually begins (before/after) age 65 and is initially marked by the rapid forgetting of newly acquired information. Eventually, victims may fail to recognize familiar people and become disoriented and unable to care for themselves. A cure for Alzheimer's (does/does not) appear to be close at hand.

Answers: 19-1. Body fat and overall weight increase (except that overall weight may decrease somewhat after the mid-50s); the rest decrease 19-2. menopause, does not 19-3. do not, substantial 19-4. dementia, 15, is not 19-5. Alzheimer's, widespread 19-6. after, does not.

20. Describe the cognitive changes associated with aging.

- 20-1. With regard to changes in cognitive ability that may accompany aging, which of the following is/are true? (Mark T or F)
- _____ Average test scores in cognitive ability show some decline after age 60.
- _____ For the majority of people the decline in general intelligence that occurs in later years appears to be relatively slight.
- _____ The major type of general cognitive loss that occurs with aging is thought to involve processing speed.
- _____ Problem solving ability generally remains unimpaired as people age if older people are given additional time to compensate for reduced speed.
- 20-2. Are there sizeable declines in memory with age? While most researchers have concluded that memory losses associated with aging are moderate, recent studies by Salthouse conclude that the decreases are (minimal/substantial) and that they begin in (early/late) adulthood. Thus, the picture is mixed.

Answers: 20-1. T, T, T, T 20-2. substantial, early.

REFLECTIONS ON THE CHAPTER'S THEMES

21. Explain how this chapter highlighted the interaction of heredity and environment.

- 21-1. The behavior of a child is the result of the child's genetic inheritance and its environment, which includes the behavior of the child's parents. In turn, the behavior of the parents toward the child is affected both by their inherited characteristics and by the behavior of the child. Thus, behavior is the result not of heredity or environment operating separately but of an _____ between the two factors.

- 21-2.** To understand the concept of interaction consider this problem: There is a form of mental retardation that results from phenylketonuria, an inherited inability to metabolize a common amino acid in milk. When fed milk, children born with phenylketonuria become mentally retarded. Is this type of retardation an inherited disorder?
- Yes, it's genetic.
 - No, it's caused by the environment.
 - A certain proportion of the causal factors are hereditary and the remainder are due to the environment.
 - The disorder results from heredity and environment operating jointly.
- 21-3.** This chapter has been concerned with changes in human behavior across the life span. The theme being stressed here is that these changes result from an interaction of heredity and environment. In your own words, explain how the interaction operates.

Answers: 21-1. interaction 21-2. d. (This disorder might at first seem to be inherited, since there is a genetic trait involved. But the retardation does not occur if the infant is not fed milk products, which involves the environment. The point is that this disorder, like behavior in general, cannot be attributed solely to nature or to nurture or even to relative weights of each; it is a function of an interaction between the two. 21-3. The interaction of heredity and environment refers to the fact that we are a product of both factors. It means more than that, however. Heredity and environment don't operate separately. Interaction means that the genetic factors affect the operation of the environment and that environmental factors affect genetic predispositions. The influence of one factor depends on the effects of the other.

PERSONAL APPLICATION • UNDERSTANDING GENDER DIFFERENCES

22. Summarize evidence on gender differences in behavior and discuss the significance of these differences.

22-1. Which gender tends to show more of (or score higher on tests of) the following abilities or traits? Circle the correct answer at the right.

Cognitive

verbal skills	Males	Females	Neither
mathematical skills	Males	Females	Neither
visual-spatial skills	Males	Females	Neither

Social

physical aggression	Males	Females	Neither
sensitivity to nonverbal cues	Males	Females	Neither
sexually permissive attitudes	Males	Females	Neither

22-2. There is an enormous overlap between the genders with regard to these traits. There are, of course, females who are more aggressive than the average male and males who are more sensitive to nonverbal cues than the average female. Thus, it is important to note that the differences referred to in this section are differences between group _____ and that there is enormous variability within groups.

Answers: 22-1. cognitive: females, males, males; social: males, females, males 22-2. averages (means).

23. Explain how biological factors are thought to contribute to gender differences.

- 23-1. For evolutionary theorists, the relative invariance of gender differences found across cultures reflects natural selection. From this perspective males are more sexually active and permissive than females because reproductive success for males is maximized by seeking (few/many) sexual partners. Greater aggressiveness has survival value for males because it enhances their ability to acquire material _____ sought by females selecting a mate.
- 23-2. Evolutionary theorists also assert that ability differences between the genders reflect the division of labor in our ancestral past. Males were primarily the hunters and females the gatherers, and the adaptive demands of hunting may have produced males' superiority at most _____ tasks.
- 23-3. The evolutionary view of gender is certainly an interesting and plausible explanation of the remarkable similarity in gender differences across cultures. The viewpoint has its critics, however. For one thing, there are reasonable _____ theories of gender differences; for another, the evolutionary explanation is relatively (easy/difficult) to test empirically.
- 23-4. Concerning other biological factors, several studies suggest that hormones contribute to shaping gender differences. For example, females exposed prenatally to high levels of an _____-like drug given their mothers during pregnancy tend to show more male-typical behavior than do other females.
- 23-5. Other biological evidence indicates that males depend more heavily on the left hemisphere for verbal processing and the right for spatial processing than is the case with females. That is, males may tend to exhibit more cerebral _____ than females.
- 23-6. The specialization finding has been linked to another finding, that females have larger _____ callosums (the connecting sheath of axons between hemispheres) than do males.
- 23-7. Results from studies of specialization and of gender differences in the corpus callosum have been (inconsistent/consistent), however. In addition, it would be difficult to see how gender differences in specialization could account for gender differences in ability.

Answers: 23-1. many, resources 23-2. spatial (visual-spatial) 23-3. alternative, difficult 23-4. androgen 23-5. specialization 23-6. corpus 23-7. inconsistent.

24. Explain how environmental factors are thought to contribute to gender differences.

- 24-1. Many researchers remain convinced that gender differences are largely shaped by the environment. One of the ways that children learn gender roles is from the consequences for their behavior, the rewards and punishments that they receive in the process known as _____ conditioning.
- 24-2. Children also acquire information by seeing what others do, the process of _____ learning. While children imitate both males and females, they are more likely to imitate the behavior of (same-sex/opposite-sex) models.

- 24-3. In addition to operant conditioning and observational learning, children are active participants in their own gender-role socialization, the process referred to as _____-socialization. First, once they discover (at age five or six) that being a boy or girl is a permanent condition, they will then _____ themselves as boys or girls. Second, following classification in terms of gender children will _____ characteristics and behaviors associated with their gender. Third, they will bring their _____ in line with their values by engaging in “sex-appropriate” behaviors.
- 24-4. Whether through operant conditioning, observational learning, or self-socialization, the major forces for gender-role socialization occur in three main areas of the child’s environment: in their _____, in _____, and in the _____.

Answers: 24-1. operant 24-2. observational (modeling), same-sex 24-3. self, classify (categorize), value, behavior 24-4. families, schools, media.

CRITICAL THINKING APPLICATION • ARE FATHERS ESSENTIAL TO CHILDREN’S WELL-BEING?

25. Explain the argument that fathers are essential for healthy development and some criticism of this line of reasoning.
- 25-1. Over the past several decades the percentage of children brought up without fathers in the home has steadily increased, from about 17% in 1960 to more than 35% today. During the same period there has also been a dramatic (decrease/increase) in teen pregnancy, juvenile delinquency, violent crime, drug abuse, eating disorders, and family dysfunction in general.
- 25-2. Further, fatherless children are two to three times more likely than fathered children to drop out of high school, become a teenage parent, or become a juvenile delinquent. In other words, father absence (causes/is correlated with) a host of unfortunate cultural trends.
- 25-3. Based on the association between father absence and social problems, some writers have asserted that the presence of a father is essential for a child’s well-being. As you are by now well aware, however, one (can/cannot) infer causation on the basis of correlational data alone.
- 25-4. Among the reasonable alternative explanations for the correlational relationship described are the following. Father absence frequently occurs when the parents _____, so it is possible that this factor, rather than father absence, may cause the negative effects referred to.
- 25-5. Or, since father absence is much more frequent in (low-income/high-income) families, it is possible that poverty, rather than father absence, may cause some (or all) of the negative effects.
- 25-6. In your continued critical thinking about the assertions discussed, recall also the fallacies in reasoning introduced in Chapter 10: irrelevant reasons, circular reasoning, slippery slope, weak analogies, and false dichotomy. Which of these apply to the following assertions? Use the abbreviations IR, CR, SS, WA, or FD.
- (a) ____ If present trends continue, our society could be on the verge of social suicide.
- (b) ____ To tolerate the trend of fatherlessness is to accept the inevitability of continued societal recession.

Answers: 25-1. increase 25-2. is correlated with 25-3. cannot 25-4. divorce 25-5. low-income 25-6. (a) SS. The argument is that if we allow one event to happen, then other events will inevitably follow on this slippery slope that will lead to disaster (b) FD. The quote may have elements of more than one fallacy, but the author really is posing a dichotomy: Either we reduce father absence, or else we will face social decline. Of course, we could do both (reduce father absence and face social decline) or neither.

Review of Key Terms

Accommodation	Fetal alcohol syndrome	Object permanence
Age of viability	Fetal stage	Placenta
Animism	Gender	Prenatal period
Assimilation	Gender differences	Primary sex characteristics
Attachment	Gender roles	Proximodistal trend
Centration	Gender stereotypes	Puberty
Cephalocaudal trend	Germinal stage	Pubescence
Cognitive development	Habituation	Secondary sex characteristics
Conservation	Infantile amnesia	Separation anxiety
Cross-sectional design	Irreversibility	Sex
Dementia	Longitudinal design	Social clock
Development	Maturation	Socialization
Developmental norms	Menarche	Stage
Dishabituation	Mentor	Temperament
Egocentrism	Meta-analysis	Zone of proximal development
Embryonic stage	Mid-life crisis	Zygote
Family life cycle	Motor development	

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| _____ | 1. The sequence of age-related changes that occurs as a person progresses from conception to death. |
| _____ | 2. The period of pregnancy, extending from conception to birth. |
| _____ | 3. The first two weeks after conception. |
| _____ | 4. The structure that connects the circulation of the fetus and the mother but that blocks passage of blood cells. |
| _____ | 5. The second stage of prenatal development, lasting from two weeks after conception until the end of the second month. |
| _____ | 6. The third stage of prenatal development, lasting from two months after conception through birth. |
| _____ | 7. The age at which the baby can first survive in the event of a premature birth. |
| _____ | 8. A collection of congenital problems associated with a mother's excessive use of alcohol during pregnancy. |
| _____ | 9. Changing existing mental structures to explain new experiences, a concept from Piaget's theory of cognitive development. |
| _____ | 10. Developmental changes in muscular coordination required for physical movement. |
| _____ | 11. The head-to-foot direction of motor development. |
| _____ | 12. The center-outward direction of motor development. |
| _____ | 13. The average ages at which people display certain behaviors and abilities. |
| _____ | 14. Characteristic mood, energy level, and reactivity. |

- _____ 15. One group of subjects is observed over a long period of time.
- _____ 16. Investigators compare groups of subjects of differing ages at a single point in time.
- _____ 17. A difficult, turbulent period of doubt and reappraisal of one's life that may occur at midlife.
- _____ 18. Emotional distress displayed by an infant when separated from a person with whom it has formed an attachment.
- _____ 19. Culturally constructed distinctions between femininity and masculinity.
- _____ 20. Widely held beliefs about females' and males' abilities, personality traits, and social behavior.
- _____ 21. Development of thinking, reasoning, remembering, and problem solving.
- _____ 22. The gradual reduction in response strength that occurs when people are repeatedly exposed to some event.
- _____ 23. The increase in response strength that occurs when people are exposed to a new stimulus event.
- _____ 24. A mental capacity that involves recognizing that objects continue to exist even when they are no longer visible.
- _____ 25. Piaget's term for the awareness that physical quantities remain constant in spite of changes in their shape or appearance.
- _____ 26. The Piagetian term for the tendency to focus on just one feature of a problem and neglect other important features.
- _____ 27. The inability to cognitively visualize reversing an action.
- _____ 28. Thinking characterized by a limited ability to share another person's viewpoint.
- _____ 29. A sequence of stages that families tend to progress through.
- _____ 30. Interpreting new experiences in terms of mental structures already available, a concept from Piaget's theory of cognitive development.
- _____ 31. The attribution of lifelike qualities to inanimate objects.
- _____ 32. A developmental period during which certain behaviors and capacities occur.
- _____ 33. The biologically based categories of male and female.
- _____ 34. A close, emotional bond of affection between an infant and its caregiver.
- _____ 35. Physical features associated with gender that are not directly needed for reproduction.
- _____ 36. The physical structures necessary for reproduction.
- _____ 37. The two-year span preceding puberty marked by the appearance of secondary sex characteristics and by rapid growth.
- _____ 38. The first occurrence of menstruation.
- _____ 39. The stage during which reproductive functions reach maturity.
- _____ 40. An abnormal condition marked by multiple cognitive deficits; more prevalent in older adults but not a product of normal aging.
- _____ 41. Developmental changes that reflect one's genetic blueprint rather than environment.
- _____ 42. A one-celled organism created by the process of fertilization, the union of sperm and egg.
- _____ 43. Behavioral differences between females and males.

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44. A term from Vygotsky's theory referring to the gradual adjustment in a helping structure as the child's competence increases.
 45. The acquisition of norms, roles, and behaviors expected of people in a particular group.
 46. Expectations concerning what is the appropriate behavior for each sex.
 47. Vygotsky's term for the gap between what the child can achieve alone versus with guidance from more skilled members of a society.

Answers: 1. development 2. prenatal period 3. germinal stage 4. placenta 5. embryonic stage 6. fetal stage 7. age of viability 8. fetal alcohol syndrome 9. accommodation 10. motor development 11. cephalocaudal trend 12. proximodistal trend 13. developmental norms 14. temperament 15. longitudinal design 16. cross-sectional design 17. mid-life crisis 18. separation anxiety 19. gender 20. gender stereotypes 21. cognitive development 22. habituation 23. dishabituation 24. object permanence 25. conservation 26. centration 27. irreversibility 28. egocentrism 29. family life cycle 30. assimilation 31. animism 32. stage 33. sex 34. attachment 35. secondary sex characteristics 36. primary sex characteristics 37. pubescence 38. menarche 39. puberty 40. dementia 41. maturation 42. zygote 43. gender differences 44. scaffolding 45. socialization 46. gender roles 47. the zone of proximal development (ZPD).

Review of Key People

Mary Ainsworth
Jay Belsky
John Bowlby

Erik Erikson
Lawrence Kohlberg

Jean Piaget
Alexander Thomas & Stella Chess

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1. Conducted a major longitudinal study in which they identified three basic styles of children's temperament.
 2. Research on daycare; also, proposed the evolutionary view that early attachment is a determinant of later reproductive strategy.
 3. Theorized that there are critical periods in human infants' lives during which attachments must occur for normal development to take place.
 4. Partitioned the life span into eight stages, each accompanied by a psychosocial crisis.
 5. Pioneered the study of children's cognitive development.
 6. Developed a stage theory of moral development.
 7. Described three categories of infant-mother attachment.

Answers: 1. Thomas & Chess 2. Belsky 3. Bowlby 4. Erikson 5. Piaget 6. Kohlberg 7. Ainsworth.

Self-Quiz

1. Which prenatal period begins at the second week and ends at the second month of pregnancy?
 - a. germinal stage
 - b. embryonic stage
 - c. fetal stage
 - d. seminal stage

2. In which prenatal stage do most major birth defects probably have their origins?
 - a. germinal stage
 - b. embryonic stage
 - c. fetal stage
 - d. seminal stage

3. How does the brain change during adolescence?
 - a. it becomes smaller
 - b. it becomes larger
 - c. white matter increases
 - d. the prefrontal cortex becomes larger

4. According to Belsky's evolutionary viewpoint, the current harshness of an environment affects parent-child attachment, which in turn affects the offspring's later:
 - a. accommodation and assimilation
 - b. adaptation to traumatic events
 - c. reproductive or mating strategy
 - d. expression of discomfort and alienation

5. What is the major conclusion from Thomas and Chess's longitudinal study of temperament?
 - a. Children's temperaments tend to go through predictable stages.
 - b. The temperament of the child is not a good predictor of the temperament of the adult.
 - c. Opposites attract.
 - d. Children's temperaments tend to be consistent over the years.

6. The crisis occurring in the first year, according to Erikson, is one involving:
 - a. trust versus mistrust
 - b. initiative versus guilt
 - c. industry versus inferiority
 - d. identity versus conformity

7. During which stage in Piaget's system is the child first able to handle conservation problems and hierarchical classification problems?
 - a. sensorimotor
 - b. preoperational
 - c. concrete operations
 - d. formal operations

8. A child in the early sensorimotor period is shown a ball, which she watches intensely. The ball is then hidden under a pillow. What will the child do?
 - a. ask, "Where is the pillow?"
 - b. stare at the pillow but not pick it up
 - c. move the pillow and pick up the ball
 - d. ignore the pillow, as if the ball didn't exist

9. Who developed a stage theory of moral development?
 - a. Piaget
 - b. Kohlberg
 - c. Gould
 - d. Bowlby

10. Which of the following cognitive capacities is most likely to decline as a function of aging?
 - a. speed of learning
 - b. crystallized intelligence
 - c. problem-solving ability
 - d. specialized intelligence

11. Some researchers have found that very young children (e.g., five months old) appear to be aware of the addition or subtraction of objects from behind a screen. The technique used in these studies was:
 - a. sensory preconditioning
 - b. self-socialization
 - c. classical conditioning
 - d. habituation-dishabituation

12. Which of the following factors tends to be accompanied by a drop in ratings of marital satisfaction?
 - a. childlessness during early married life
 - b. the birth of the first child
 - c. the first child's departure for college
 - d. when the last child leaves home

13. Females tend to score slightly higher than males on tests of:
 - a. verbal ability
 - b. mathematical ability
 - c. visual-spatial ability
 - d. cerebral specialization

14. Females exposed to high levels of androgen during prenatal development tend to show:
 - a. more male-typical behavior than other females
 - b. more stereotypic female behavior than other females
 - c. less cerebral specialization than other females
 - d. a larger corpus collosum than other females

15. Once children discover that their gender is permanent, they are likely to want to engage in behavior that is "sex appropriate" as defined by their culture. This process is referred to as:
 - a. operant conditioning
 - b. observational learning
 - c. self-socialization
 - d. classical conditioning

Answers: 1. b 2. b 3. c 4. c 5. d 6. a 7. c 8. d 9. b 10. a 11. d 12. b 13. a 14. a 15. c.

InfoTrac Keywords

Dementia
Fetal Alcohol Syndrome

Gender Stereotypes
Puberty

Temperament

